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Media Multitasking and geographical affiliation: an exploratory study

Multitarea, medios y origen geográfico: un estudio exploratorio

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Abstract

Multitasking, especially involving media, has become a constant in our daily lives, increasingly promoted by technological developments on ever-developing personal equipment. Media multitasking has frequently been studied from the perspectives of both gender and age, so as to determine who multitasks more or better: men or women, adults or younger people. There are, however, fewer studies on how origin, cultural or geographical background can affect the tendency to media multitask. This paper will attempt to analyse a possible link between geographical affiliation, media use and the tendency to multitask of a group of 36 researchers of different nationalities, working in the same research institute. Differences in the use of several media and global media-use values have been recorded, with Europe presenting the lowest media use - less than half of the values of the highest cluster (Latin America). SMS is the least prevalent media, with Computer-based applications and web-surfing constituting the most prevalent media in most clusters. The European cluster also presents the lowest multitasking values, while the West African cluster registers the highest index.

Keywords

Media multitasking; polychronicity; media use; new media; traditional media

Resumen

La multitarea, especialmente con los medios de comunicación, se ha convertido en una parte omnipresente de nuestro cotidiano, cada vez más promovida por desarrollos tecnológicos en equipos personales en constante desarrollo. La multitarea con los medios de comunicación se ha estudiado sistemáticamente desde una perspectiva de género y de edad, para responder a la pregunta de quién realiza más multitareas: hombres o mujeres, adultos o personas más jóvenes. Sin embargo, hay menos estudios sobre cómo el origen, los antecedentes culturales o geográficos pueden afectar la tendencia a la multitarea con medios. Este estudio intentará analizar un posible vínculo entre la afiliación geográfica, el uso de los medios y la tendencia a realizar múltiples tareas de un grupo de 36 investigadores de diferentes nacionalidades. Se han registrado diferencias en el uso de varios medios y valores de uso globales, con Europa presentando el uso de medios más bajo, menos de la mitad de los valores del grupo latino-americano. Los SMS son los medios menos frecuentes, y las aplicaciones informaticas y la navegación web los más comunes. El grupo europeo presenta los valores más bajos de multitarea, mientras que el grupo de África Occidental registra el índice más alto.

Palabras clave

Multitarea; policronicidad; uso de los medios; nuevos medios; medios tradicionales

1. Introduction

The results of an initial study by the authors on media use and media multitasking habits of 10 participants of different geographical origins (of an otherwise fairly homogeneous group) has provided the impetus for a further in-depth questioning on whether nationality/regional affiliation can be seen as a predictor for media multitasking. In fact, the phenomenon of multitasking has been addressed by multiple studies, researching its causes, its effects, but also the ability of certain groups to engage: women are generally perceived to be able and more prone to multitask than men (O'Connell, 2002; Shellenbarger cited in Foehr, 2006); younger generations are reported to multitask more than older generations (Brasel & Gips, 2011). However, less attention has been paid so far to the influence of a further differentiating factor: the geographical affiliation or cultural origin of the respondents.

This study attempts to assess whether different regional affiliations can have an impact on a person's tendency to multitask. It will focus on thirty-six subjects, all males, all with the same profession and the same working environment and evaluate their media use and media multitasking habits, with the purpose of analyzing whether it is possible to identify a common tendency to media multitask between individuals of the same or close geographical region.

However, in order to study a field of research and reflect upon it, it is foremost necessary to define the concepts and terminology that will be addressed herein. In this paper, we opted to define the following concepts to help clarify their scope: *Multitasking* and *Media Multitasking*, *Geographical Affiliation* and *Regional Clustering*, *Polychronicity* and *Monochronicity*, *New Media* and *Traditional Media*. The tool used (Media Use Questionnaire) and the Index assessed (Media Multitasking Index) will be presented in the following section.

The American Psychology Association (APA) has characterized the occurrence of multitasking in those situations "when someone tries to perform two tasks simultaneously, switching from one task to another, or being able to perform two or more tasks in rapid succession". This definition presents three different temporal combinations of task performance: the attempt to conduct more than one task at the same time; the alternation or time-switching between tasks; and the rapid sequence of the tasks. These three options fall under the two different multitasking types defined by Salvucci, Taatgen & Borst (2009): concurrent multitasking (as the first example listed by APA) and sequential multitasking (when the person spends more or less time with one task until moving to the second one, or when one alternates between tasks).

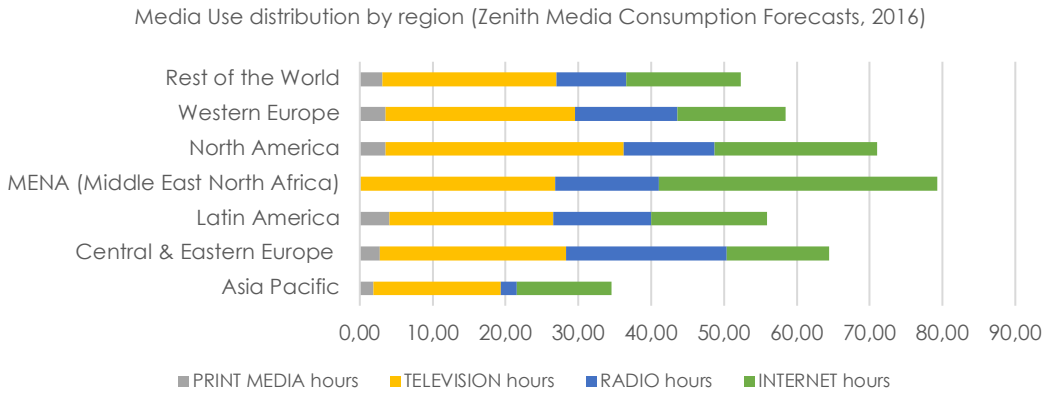
Although the APA definition presented above fails to specify the type of tasks that are performed or the media used to perform them, it is quite common to associate the concept of multitasking with the use of one or several media, thus originating the term *media multitasking*. Media multitasking is defined by Wallis (2010: 8) as a possible threefold event: media multitasking can occur (a) between medium and face-to-face interaction; (b) between two or more media; and (c) within a single medium. Baumgartner et al. (2014: 1121), on the other hand, characterize it as an activity involving interaction with two different types of media *(*"media multitasking including two types of media") or between one type of media and a non-media related activity ("media multitasking including media and other activities").

Whichever categorization one prefers, and in spite of the rapid increase of multitasking behaviors due to the development of mobile technologies, we assume that media multitasking does not occur only when one is interacting with high tech products, but also in other daily situations, when the tasks involve current media. In this paper, we will consider Media Multitasking as an activity that involves the interaction with at least two media types from a pool of twelve possible media, both traditional and newer/emerging media.

The basis of media multitasking is, as aforementioned, media use. Reference values for media use that include all the countries listed in this study or directly map the regional clusters are difficult to find. In addition, there is generally insufficient available data to match each of the 12 media listed in the questionnaire, with most studies focusing on Print Media (usually subdivided into Magazines and Newspapers), Television, Radio and Internet. The Zenith Media Consumption Forecast 2016 (Austin et al., 2016) presents a comprehensive survey on the amount of time spent with the following media: print media (newspapers and magazines), television, radio, cinema and outdoor advertising viewing, for 71 countries across the world.

While the study only covers roughly two thirds of our addressed countries (United Kingdom, Portugal, Spain, Greece, Egypt, Pakistan, Serbia, Colombia, Brazil, Mexico and India) and presents different data information for some (only television-viewing hours are available for Pakistan, e.g., while data for Egypt does not include Print Media), it nevertheless showcases interesting regional data, that may be relevant as comparison for our study. Daily values presented in the report have been converted into the weekly values to allow for comparison with the media use information of the current study, and are presented in Figure 1.

Graph 1: Media use distribution per region (hours)



Source: Data from Zenith Media Consumption Forecasts, 2016

It may be interesting to point out that even without figures for Print Media (which combines the values awarded to Newspapers and Magazines), the Middle East and North African Cluster have the highest value in terms of hours spent with the listed media types, with the Asia Pacific Cluster reporting the lowest values for each of the media and lowest overall values.

Geographical affiliation as a predictor for media multitasking has received so far limited attention in the literature with the most relevant studies in this field being those of Kononova et al. (2013, 2014, 2015), Voorveld et al. (2014) and Bowman et al. (2014). Kononova et al. (2013) assessed media multitasking behaviors of young adults in the United States (N=201), Russia (N=152), and Kuwait (N=179), with three cross-sectional surveys being conducted at one university in each of the countries. Kononova et al. (2014) addressed the subject of multitasking with traditional and new media with college students (N=532) in Kuwait, Russia and the United States. Kononova and Chiang (2015) explored how media and audience factors, such as country of residence, media ownership, and polychronicity, predict media multitasking behaviors via a cross-cultural survey (N=1972) that included respondents from the United States and Taiwan, consulted separately. Voorveld et al. (2014) administered an online questionnaire to 5.973 participants in six different countries (Germany, United States, United Kingdom, the Netherlands, Spain and France), while Bowman et al. (2014) assessed Malaysian (N=359) and American (N=238) college students' use of electronic media while studying.

A common aspect of these studies is that they focus on participants questioned independently in different countries, accounting each national survey for the results of the country where it was performed. Kononova et al. (2013) focus on Russia and Kuwait; Kononova et al. (2014) on Kuwait, the United States and Russia; Kononova (2015) on the United States and Taiwan; Voorveld et al. (2014) on Germany, the United States, the United Kingdom, the Netherlands, Spain and France; Bowman et al. (2014) on Malaysia and the United States. Most of the referred studies highlight economic, political and cultural differences between the countries, which can lead to different media systems and landscapes, thus adding an external differentiating factor. Furthermore, all of the reported studies involve a heterogeneous sample in terms of gender; some of them include a wide distribution of participants in terms of age (Voorveld et al., 2014); while others involve respondents that have a very dissimilar professional or educational level and background (Kononova, 2015; Voorveld et al., 2014).

This study differs from the referred ones by selecting a group of participants who: i) are of the same gender, ii) are of similar age, iii) possess similar educational backgrounds and qualifications, iv) work in the same professional environment, v) live in and around the same city, thus experiencing the same structural characteristics and external medial influences. Considering that the main differentiating factor will be the geographical origin of the participants, we will attempt to assess whether it is possible to identify common tendencies to media multitask between individuals of the same or close geographical region, in line with Voorveld et al. (2014) suggestion, regarding the acquisition of a sample that is more similar in relation to important background characteristics.

When defining *identity*, Hogan (2009) refers to nationality and geographical affiliation (one of the countless

layers to an individual's identity) as the "specific loyalty to countries or given geographical areas", stating that "one's geographical location is not limited to his physical birthplace or current location" instead it "can be determined by his mentality or system of beliefs". For her study, Hogan (2009) selects "nationality" when referring to the "geographical country that one feels the strongest alliance or loyalty towards". In this study, and given the fact that some of the participants have more than one nationality (having acquired Portuguese citizenship after a long period in the country), we have opted to refer to *geographical affiliation*, used with similar meaning also in other studies (Peters et al., 2014), to refer to the participants' reference country.

Each participant's media use and media multitasking index will be recorded individually in this study, together with the reference to the participant's geographical affiliation. However, as all the respondents have different geographical affiliations, and in order to better compare different regional groups, we opted to also aggregate them into regional clusters based on geographical proximity, following the hypothesis postulated by Latané (1995) cited by Harton & Bourgeois (2004) that "over time, attitudes within a group should show regional clustering; that is, people will be increasingly likely to share similar attitudes with those living close to them".

Most of the studies listed above addressing the geographical dimension of multitasking relate it with the concepts of *Monochronicity* and *Polychronicity*, which can be perceived both as a cultural construct as well as an individual preference. Monochronicity was first defined by the American anthropologist Edward T. Hall who, in *The Silent Language* (1959), simply described it as a preference for "doing one thing at a time", further developing the construct in subsequent works. Polychronicity, rather than being the other end of the spectrum, is considered as "a point in a continuum ranging from monochronic to polychronic" (Slocombe, 1999, cited in Voorveld et al., 2014). Hall argued that cultures were predominantly monochronic or polychronic in what concerns their relation with time, with countries such as the United States or the United Kingdom as well as most northern European countries being characterized as predominantly monochronic, and regions such as the Indian sub-continent, Latin America and Africa considered to be chiefly polychronic.

In line with Hall, Morden (1999) has proposed a Monochronic-Polychronic Demographic Scale, which considers the following groups by order of progression from Monochronic to Polychronic: Germans, Swiss and Austrians; Americans; Scandinavians, Finns; *British*, Canadians, New Zealanders; Australians, South Africans; Japanese; Dutch, Flemish Belgian; Other American cultures; French, Walloon Belgian; Koreans, Taiwanese, Singaporeans; Czechs, Slovakians, Croats, Hungarians; Chinese; Northern Italians; Chile, *Other Slavs*; *Portuguese*; *Spanish,* Southern Italians*, Mediterranean peoples*; *Indians, and other Indian sub-continent*; Polynesians; *Latin Americans, Arabs, Africans.*

As an individual preference, which can be measured using scales, Bluedorn et al. (1999) presents a further definition of polychronicity highlighting it is "the extent to which people (1) prefer to be engaged in two or more tasks simultaneously and (...) (2) believe their preference is the best way to do things". This perspective of polychronicity will not be addressed in this study, as participants were solely asked to report behaviors related to the use of media not preferences or beliefs.

Although the concepts of multitasking and polychronicity are separate theoretical constructs, they are conceptually related (König & Waller, 2010, cited in Voorveld et al., 2014), assuming the former the behavior of engaging in simultaneous tasks concurrently and the latter the preference for doing so.

For the purpose of this study, the 12 media types were divided into traditional media and new media, with the former incorporating television, radio, music, non-music audio and telephone calls and the latter including computer-based video, video and computer games, instant messaging, SMS, e-mail, Web surfing and other computer-based applications.

2. Method

The Media Use Questionnaire (MUQ) and the Media Multitasking Index (MMI) were proposed by Ophir, Nass and Wagner (2009). The Media Use Questionnaire comprises two questions both addressing twelve different media forms: 1) print media, 2) television, 3) computer-based video (e.g. Youtube or online television episodes), 4) music, 5) nonmusic audio, 6) video or computer games, 7) telephone and mobile phone voice calls, 8) instant messaging, 9) SMS (text messaging), 10) email, 11) web surfing, and 12) other computer-based applications (e.g. word processing). For the first question, the respondents have to indicate the total amount of weekly hours spent using each of the listed media. The second question involves indicating in a matrix how frequently ("Most of the time'', ''Some of the time", ''A little of the time'', ''Never') they use different concurring media, while using each individual primary medium. Although Ophir

et al. opted to discard "Text Messaging" as a primary medium in this stage, we included in this question the original 12 options both as primary and secondary media.

The Media Multitasking Index is computed based on the results of the Media Use Questionnaire. In order to create it, the authors have assigned numeric values to each of the matrix responses: 1 ("Most of the time"), 0,67 ("Some of the time"); 0,33 ("A little of the time"); 0 ("Never") and summed the responses for each primary medium, obtaining a measure on how often each individual medium was used together with other media activities. Since each primary medium is reportedly used for different periods, the MMI was created by computing a sum across primary medium use weighted by the percentage of time spent with each primary medium, following the formula depicted below:

$$MMI = \sum_{i=1}^{12} \frac{m_i \times h_i}{h_{total}}$$

The study was conducted in two stages: an initial stage with 10 participants and a second stage with 36 respondents, with the survey being administered in English (the working language for most of the participants) and in paper-and-pencil format.

In the first stage, the Media Use Questionnaire was presented to a group of 10 participants of different regional origins (United Kingdom [UK], Spain [SP], Greece [GR], Portugal [PT], Egypt [EG], Sudan [SD], Libya [LY], Iran [IR], Iraq [IQ] and Pakistan [PK]). Although some of the participants had acquired Portuguese nationality at different stages since arriving in Portugal, their geographical affiliation for the majority of the last five years was recorded for each participant. All respondents were male, post-graduate researchers in Engineering, and work in the same research group of a research institute co-located with the University of Aveiro, thus having a common technical and professional background. Given the geographical locations of their countries of origin, the participants' answers were grouped into three regional clusters: Europe (UK, SP, GR, PT), North-Eastern Africa (EG, LY, SD) and South/Western Asia (IR, IQ, PK).

In what concerns other possible variables, we consider the group to be quite homogeneous with age being the only other factor, besides regional affiliation, where there is a slight asymmetry: the average age of the respondents is 39.8 years with the youngest respondent being 32 and the oldest 50.

The second stage involved 36 participants from 18 different countries, comprised of the ten original countries and additional participants from Serbia [RS], Cuba [CU], Brazil [BR], Colombia [CO], Mexico [MX], Bangladesh [BG], India [IN] and Nigeria [NG]. Given their geographical reference the participants were distributed into six regional clusters: Europe (UK, SP, GR, PT, RS), North-Eastern Africa (EG, LY, SD), Latin America (CU, BR, CO, MX), South Asia (PK, BG, IN), Western Asia (IR, IQ) and West Africa (NG). All participants in the second stage were, once more, male, post-graduate researchers in Engineering, currently working in the same research institute, thus having a common educational and professional background. The mean age of the extended group was 35.92, with a standard deviation of 6.11, being the youngest respondent 25 and the older respondent 50 years old.

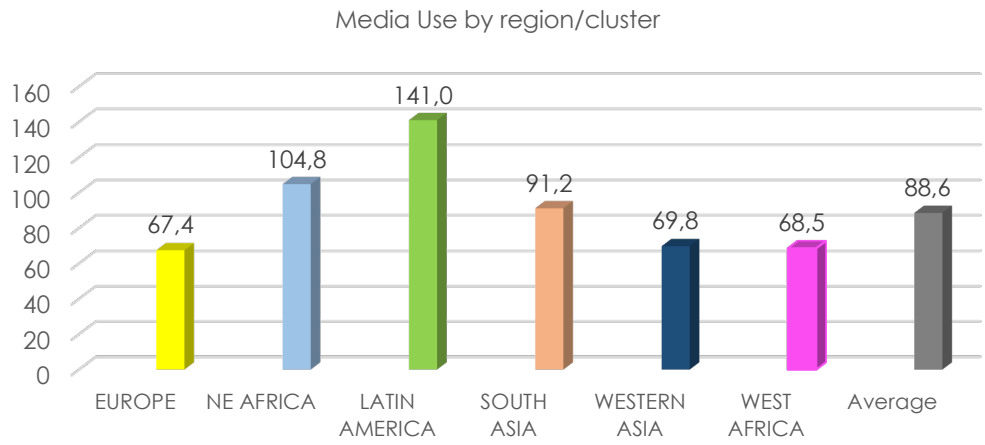
By analyzing our group of respondents, we can confirm that although they share similar educational and professional profiles and are geographically co-located, there is a slight heterogeneity in terms of age, when our initial aim was to have a clearly homogeneous sample, albeit in matters of geographical affiliation. We believe, therefore, that, besides geographical affiliation, it may also be relevant to assess potential differences based on age, namely between respondents born before and after 1984, the year pinpointed as the shift between two generations: the *Generation X* and the *Millennials* (Kumar & Vigil, 2011), although the main scope of the paper remains to analyze a possible link between geographical affiliation and media multitasking habits.

3. Results

3.1. Media Use

The figure below depicts the reported weekly hours of media use by regional cluster. The mean value of hours is 88.6, with a standard deviation of 44.7.

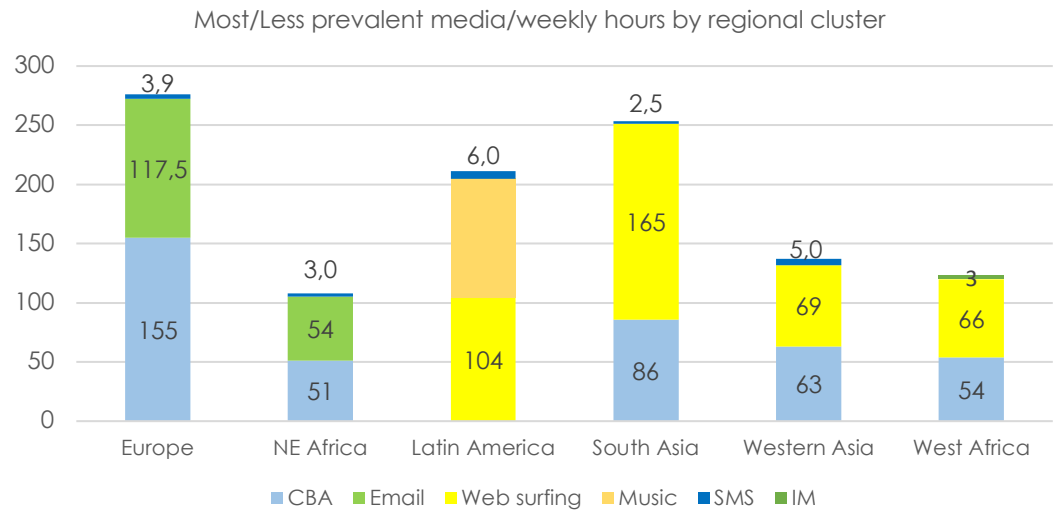
Graph 2: Media use (weekly hours) by region cluster



Source: The authors.

Three regional clusters reported weekly media use values above the mean –NE Africa, Latin America and South Asia– while the other three regional clusters report media use values that are considerably below the mean, especially Europe. The relatively high values of the NE Africa cluster are comparable to the reference values presented in Alan et al. (2016), while the higher values of the Latin America Cluster surpass the reference values. The low values recorded for Europe are somewhat surprising, considering the referred reference values, while the results for Asia seem in line with these. Still considering the weekly hours spent using media, the most prevalent media and less prevalent media by regional cluster are depicted in Graph 3.

Graph 3: Most/Least prevalent media (weekly hours) by regional cluster



Source: The authors.

SMS is the least prevalent medium in terms of weekly hours spent on in every regional cluster, excluding West Africa (Instant Messaging). The most prevalent medium is different in all six regional clusters: in Europe and NE Africa, other computer-based applications (such as word processor or spreadsheets) and e-mail are the most used, whereas in Latin America, South Asia, Western Asia and West Africa Web surfing and

other CBA are the most referred ones. In the case of the Latin America cluster, Music is also highly mentioned.

There is a relevant difference (sig 2-tailed = .03, significance level 0.05) in terms of hours of use regarding traditional media (television, radio, music, non-music audio and telephone calls, mean: 6.29) and new media (computer-based video, video and computer games, instant messaging, SMS, e-mail, Web surfing and other computer-based apps, mean: 8.15).

This difference is particularly visible in terms of age, namely when we analyze the number of hours of use of new media by participants with less and with more than 33 years old. Equal variances assumed the mean difference is high (sig 2-tailed = .06) with higher figures by the former.

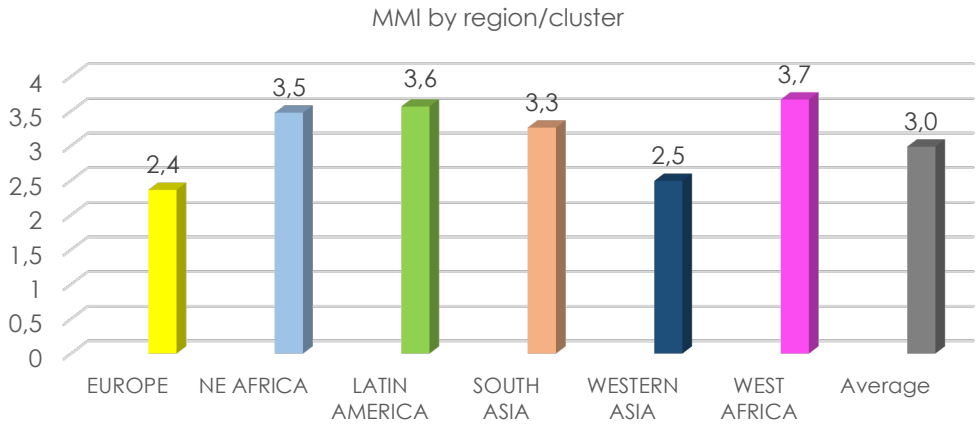
There are also differences in the reported hours of use in terms of age groups (participants younger than 33 years old and older than 33 years old) in the following media: music (sig 2-tailed = .03) e computer-based video (sig 2-tailed = .04), and TV (sig 2-tailed = .02).

There were no significant differences to report in terms of hours of use and regional clusters.

3.2. Media Multitasking

Figure 4 presents the MMI values of this study. MMI is a measure of the mean number of other media used while using each primary medium. The mean MMI value obtained was 3.0 with a standard deviation of 1.2.

Graph 4: Media Multitasking index by region cluster



Source: The authors.

A brief analysis of the cluster results shows that the MMI calculated for both Europe and Western Asia clusters are below the mean, whereas they are above the mean for the other clusters.

This value also serves to calculate the number of media a person concurrently consumes when consuming a given primary media, allowing the determination of *heavy media multitaskers* (HMMs are one standard deviation or more above the mean) or *light media multitaskers* (LMMs are one standard deviation or more below the mean) on this index (Ophir et al., 2009: 15583).

The data obtained allowed the identification of participants who are heavy multitaskers (especially in the West Africa cluster, in which all the participants are HMMs), and those who are not (especially in the Europe Cluster in which four participants are clearly LMMs).

In this study, Media multitasking was also moderately correlated with the total hours of media use, r (36) 0.34, P< 0.005.

Data analysis also revealed the existence of differences in terms of the use of traditional media as multitasking media for participants younger than 33 years old and older than 33 years old (sig 2-tailed = .03) and of a significant difference (sig 2-tailed = .01) in terms of the use of traditional media as multitasking

media by cluster. These differences can be further decomposed by media, since the t-tests revealed significant differences in TV as secondary media (sig 2-tailed= .01) for participants older than 33 years old and IM as secondary media (sig 2-tailed: .04) for participants younger than 33 years old.

Comparisons between individuals from countries traditionally characterized as monochronic and individuals from areas usually defined as polychronic was not possible, since upon closer inspection, and following Morden's suggested Monochronic - Polychronic Demographic Scale, only one of the respondents was considered to belong to a traditionally monochronic culture.

4. Discussion

The results obtained in this study bring about several issues that deserve a more detailed discussion and reflection.

Analyzing the number of hours of media use, the existence of a significant difference of hours of media use favoring new media is not surprising at all since a growing number of consumers tends to increasingly consume media formats in new media associated devices (Ofcom, 2015). Hence, the differences found in the data stress these contemporary consumer behaviors and the cases of 'music' and 'computer-based video' are very representative of this trend. The music media, for instance, was associated to traditional media and data showed the existence of significant differences in terms of hours of use between participants younger and older than 33 years old. The same significant difference was found with the 'computer-based video' media (categorized as new media). The difference of number of hours of media use (traditional vs new) was also very high (sig 2-tailed= .06) with participants younger than 33 years showing a higher usage. However, our observations of the participants lead us to think that we are witnessing the same behavior – listening to music, for instance – but done with different media supports (analogical vs digital/new media).

These facts also led us to conclude for the need to develop a new version of the instrument used (which is somewhat dated), to reflect recent trends of media use and consumption, such as: new consumption forms of TV (catch-up TV, binge viewing, internet streaming channels, OTT contents), of music (Spotify, YouTube, Apple music, for instance), audio (podcasts, for instance) and all the recent social media apps and tools that materialize the media convergence phenomenon, also visible in the emergence of the smartphone/tablet as all-around media consumption devices.

The reported hours of use of TV (categorized as a traditional media) are less expected although data confirms that it was more reported by participants older than 33 years old.

Nevertheless, the messy and fuzzy media landscape of today is difficult to apprehend with instruments that are not updated and do not reflect current media consumption behaviors.

In terms of media multitasking, the results show that there are significant differences in the use of traditional media as primary media, particularly in the case of TV for older participants (> 33 years old) and IM for younger participants (< 33 years old). Then again, these results were expectable, particularly because they stress very different media uses by regional cluster. In the case of 'music' data shows that the Latin America cluster has very high values when compared, for instance, with the EU cluster.

5. Conclusion

A major constraint of this study was the limited sample in terms of participants per country: having 36 participants originating from 18 different countries means that the rate of participants per country is necessarily low. In order to attempt an assessment of how geographical distribution affects one's tendency to multitask the participants had to be grouped into regional clusters, which may include countries that, though geographically close may exhibit significant cultural differences. The participation of more respondents from the same country (or with the same declared geographical affiliation) would be necessary to fully validate some of the assumptions of this study. We believe though, that there is enough data gathered to launch the possibility of the existence of a tendency of different groups not only to spend more or less time using different media, but also to cumulatively use different media concurrently.

A further limiting element that we consider noteworthy is the instrument used (MUQ and MMI from Ophir, Nass and Wagner) which we believe currently requires an update to include several new media trends, that can be accessed from multiple platforms and applications that were not available when the study was first developed (2009).

A more detailed study conducted with a wider sample and an updated instrument will allow us to test the hypothesis of a link between cultural perceptions of time (mono and polychronicity) and their influence on multitasking behaviors or the perspective, presented by Chung and Lim (2005) "that a hybrid, *mobilechronic* temporality appears to be emerging, where people in predominantly monochronic cultures are engaging in more polychronic behaviour facilitated by mobile communication".

The major strength of the study, which we believe can lead to a more in-depth survey is the fact that, while assessing the possible implications of one's geographical affiliation on one's media multitasking behaviors, it does so by questioning participants that are currently co-located in the same city and country. What this allows is the elimination of external geographically related factors that may affect one's tendency or ability to multitask with media (e.g. differences in national media landscapes) while previous studies compared participants residing in different countries with necessarily different media outlooks.

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